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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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12/27/2001

John H. Hughes JR.

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EXAMINER

BOAKYE, ALEXANDER O

ART UNIT

PAPER NUMBER

2667

DATE MAILED: 12/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/034,609	Applicant(s) HUGHES ET AL.	
	Examiner ALEXANDER BOAKYE	Art Unit 2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-83 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,24-26,32-40 and 62 is/are rejected.
- 7) ☒ Claim(s) 2-23,27-31,41-61 and 63-83 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/05/005</u> . | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 32, 33, 34, 35, 36, 37, 38, 39, 40 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brewer et al. (US Patent # 6,876,657).

Regarding claim 1, Brewer teaches a method for routing packets in a router (column 3, lines 20-22; see Fig. 1), the method comprising: receiving a plurality of packets (column 3, lines 22-24); storing the plurality of packets in a packet reorder buffer (column 3, line 66- column 4, lines 1-5); and forwarding the plurality of packets in a second order from the packet reorder buffer (column 2, lines 15-17; column 7, lines 17-28; Packet forwarding engine of Fig. 1 forwards the plurality of packets in the second order from the packet reorder buffer as evidenced by Brewer). Brewer differs from the claimed invention in that Brewer does not explicitly disclose first order. However, one of ordinary skill in the art would have been motivated to incorporate first order into communication network to enable routers process information packets in the order received, so that the order of packets exiting a router is the same as the order of packet entering the router. Therefore, it would have been obvious to one of ordinary skill in the

Art Unit: 2667

art at the time the invention was made to incorporate first order and second order into the communication network of Brewer with the motivation being that it provides capability for the incoming packet rate maintain constant throughout processing of the packet, so that the packet flows does not fall behind, resulting in queuing and latency of packets.

Regarding claim 32, Brewer teaches a network element (Fig. 1) comprising: a processor (column 3, lines 45-46); the processor is configured to receive a plurality of incoming packets (column 3, lines 22-24) ; separate the plurality of incoming packets into a plurality of subsets of incoming packets (column 6, lines 5-9); forwarding the plurality of subsets of incoming packets in a second order (column 2, lines 15-17; column 7, lines 17-28 ; Packet forwarding engine of Fig. 1 forwards the plurality of packets from the packet reorder buffer as evidenced by Brewer). Brewer differs from the claimed invention in that Brewer does not explicitly disclose first order. However, one of ordinary skill in the art would have been motivated to incorporate first order into communication network to enable routers process information packets in the order received, so that the order of packets exiting a router be the same as the order of packet entering the router. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate first order and second order into the communication network of Brewer with the motivation being that it provides capability for the incoming packet rate maintain constant throughout processing of the packet, so that the packet flows does not fall behind, resulting in queuing and latency of packets.

Regarding claim 33, Brewer teaches that the plurality of incoming packets is separated according to a plurality of characteristics of the plurality of incoming packets (column 6, lines 5-9).

Regarding claim 34, Brewer teaches that incoming packets in each of the plurality of subsets of incoming packets are forwarded in an order that the incoming packets are received (column 3, lines 38-40).

Regarding claim 35, Brewer teaches that one of the plurality of characteristics is a destination address of the plurality of incoming packets (column 7, lines 49-52; the claimed destination address of the plurality of incoming packets is contained in the packet header).

Regarding claim 36, Brewer teaches that one of the plurality of characteristics is a source address of the plurality of incoming packets (the claimed source address is contained in the packet header as evidenced by Brewer).

Regarding claim 37, Brewer teaches that one of the plurality of characteristics is a protocol used by the plurality of incoming packets (the claimed protocol is inherent in router packet control and ordering system since plurality of packets enter the router).

Regarding claim 38, Brewer teaches that one of the plurality of characteristics is an address of at least one incoming port used by the plurality of incoming packets (column 7, lines 49-52 ; the address of at least one incoming port is contained in the packet header).

Regarding claim 39, Brewer teaches that one of the plurality of characteristics is an address of at least one outgoing port used by plurality of incoming packets (column 7, lines 49-52).

Regarding claim 40 Brewer teaches a network for routing packets in a router comprising: means for receiving a plurality of packets (column 3, lines 22-24); means for storing the plurality of packets in a packet reorder buffer (column 3, line 66-column 4, lines 1-5); and means for forwarding the plurality of packets in a second order from the packet reorder buffer (column 2, lines 15-17; column 7, lines 17-28). Brewer differs from the claimed invention in that Brewer does not explicitly disclose first order. However, one of ordinary skill in the art would have been motivated to incorporate first order into communication network to enable routers process information packets in the order received, so that the order of packets exiting a router be the same as the order of packet entering the router. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate first order into the communication network of Brewer with the motivation being that it provides capability for the incoming packet rate maintain constant throughout processing of the packet, so that the packet flows does not fall behind, resulting in queuing and latency of packets.

Regarding claim 62, Brewer teaches receive a plurality of packets (column 3, lines 22-24); store the plurality of packets in a packet reorder buffer (column 3, line 66-column 4, lines 1-5); and forward the plurality of packets in a second order from the packet buffer (column 2, lines 15-17; column 7, lines 17-28). Brewer differs from the claimed invention in that Brewer does not explicitly disclose first order. However, one of

ordinary skill in the art would have been motivated to incorporate first order into communication network to enable routers process information packets in the order received, so that the order of packets exiting a router be the same as the order of packet entering the router. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate first order into the communication network of Brewer with the motivation being that it provides capability for the incoming packet rate maintain constant throughout processing of the packet, so that the packet flows does not fall behind, resulting in queuing and latency of packets.

2. Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilford et al. (US Patent # 6,687,247).

Regarding claim 24, Wilford teaches a packet reorder buffer (column 17, lines 48-51 ; see Fig. 10); and a 'head-of-line' pointer (column 28, lines 44-46). Wilford differs from the claimed invention in that Wilford does not explicitly disclose packet reordering system. However, one of ordinary skill in the art would have been motivated to use reordering in order to provide low latency routing based on packet priority. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use reordering with motivation being that it provides low latency routing based on packet priority.

Regarding claim 25, Wilford teaches a packet receiving unit coupled to the packet reordering system, the packet receiving unit is configured to receive a plurality of

packets column 17, lines 29-33; LU of Wilford corresponds to the claimed packet receiving unit).

Regarding claim 26, Wilford teaches a packet forwarding unit coupled to the packet reordering system, the packet forwarding unit is configured to forward the plurality of packets (column 17, lines 24-28).

Allowable Subject Matter

3. Claims 2-23, 27-31, 41-61 and 63-83 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Boakye whose telephone number is (571) 272-3183. The examiner can normally be reached on M-F from 8:30am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham, can be reached on (571) 272-3179. The fax number is (571) 273-8300. Any inquiry of general nature or relating to the status of this application or proceeding should be directed to Electronic Business Center numbers 866-217-9197 and 703-305-3028.


Art Unit: 2667

Alexander Boakye

Patent Examiner

AB

12/10/05


CHI PHAM
PERMISSORY PATENT EXAMINER
TECHNOLOGY CENTER
12/21/05